

Insulet Corporation

SAR Exemption Calculation Report

SCOPE OF WORK

SAR Exemption Calculation of DASH Gen 3 Pod, Model POD-BLE-I1-520

REPORT NUMBER

105634374BOX-008.MPE

ISSUE DATE

August 26, 2024

[REVISED DATE]

Original Issue

DOCUMENT CONTROL NUMBER

Non-Specific Radio Report Shell Rev. December 2017

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SAR Exemption Calculation Report (FULL COMPLIANCE)

Report Number: 105634374BOX-008.MPE

Project Number: G105634374

Report Issue Date: August 26, 2024

Model(s) Tested: POD-BLE-I1-520

Standards: FCC Part 1 Subpart I, April 2021

Procedures Implementing the National Environmental Policy Act of 1969
§1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

ISED RSS-102 Issue 5, March 19, 2015

Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus
(All Frequency Bands)

KBD 447498 D01 General RF Exposure Guidance v06

Tested by:
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Table of Contents

1 *Introduction and Conclusion* 4

2 *Evaluation Summary* 4

3 *Client Information* 5

4 *Description of Equipment Under Test and Variant Models* 5

5 *SAR Test Exclusion Thresholds Calculation* 6

6 *Revision History* 8

1 Introduction and Conclusion

This evaluation report covers for a mobile device subject to routine environmental evaluation for RF exposure. A mobile device is defined as a transmitting device designed to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

The evaluation indicated in section 2.0 were performed on the product constructed as described in section 4.0. The remaining sections are the verbatim text from the actual evaluation during the investigation. These sections include the evaluation name, the specified Method, and Results. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product evaluated **complies** with the requirements of the standard(s) indicated. The results obtained in this report pertain only to the item(s) evaluated. Intertek does not make any claims of compliance for samples or variants which were not evaluated.

2 Evaluation Summary

Section	Test full name	Result
3	Client Information	-
4	Description of Equipment Under Evaluation and Variant Models	-
5	System Setup and Method	-
6	SAR Test Exclusion Thresholds Calculation FCC §1.1310; ISED RSS-102 Issue 5 KDB 447498 D01 General RF Exposure Guidance v06	Compliant
7	Revision History	-

3 Client Information

This EUT was tested at the request of:

Client: Insulet Corporation
100 Nagog Park
Acton, MA 01720
USA

Contact: Rachel Zhang
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4 Description of Equipment Under Test and Variant Models

Manufacturer: Insulet Corporation
100 Nagog Park
Acton, MA 01720
USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
DASH Gen 3 Pod	Insulet Corporation	POD-BLE-I1-520	002 and 006

Receive Date:	07/10/2024
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)
DASH Gen 3 Pod Automated Insulin Delivery System

Equipment Under Test Power Configuration			
Rated Voltage	Rated Current	Rated Frequency	Number of Phases
4.5 V (3 x 1.5 V Batteries)	120 mAh per battery	DC	N/A

Variant Models:

The following variant models were not tested as part of this evaluation and are not eligible for certification; but have been identified by the manufacturer as being electrically identical models, depopulated models, or with reasonable similarity to the model(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

None

5 SAR Test Exclusion Thresholds Calculation

5.1 Requirement(s)

FCC §1.1310 Radiofrequency radiation exposure limits

FCC SAR Exemption per KDB 447498 Section 4.3.1 (a)

- a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$
- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz

RSS 102 SAR Exemption

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance^{4,5}

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤ 5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤ 300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

The exemption limits in Table 1 are based on measurements and simulations of half-wave dipole antennas at separation distances of 5 mm to 25 mm from a flat phantom, providing a SAR value of approximately 0.4 W/kg for 1 g of tissue. For low frequencies (300 MHz to 835 MHz), the exemption limits are derived from a linear fit. For high frequencies (1900 MHz and above), the exemption limits are derived from a third order polynomial fit.

5.2 Method

The SAR test exclusion thresholds per 447498 D01 General RF Exposure Guidance v06 was calculated with a separation distance of 5 mm in order to show that the EUT is compliant with FCC §2.1091 and ISED RSS-102.

The SAR test exclusion thresholds was calculated by using following equation:

- a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
- $$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$
- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz

5.3 Results:

The sample tested was found to Comply.

5.4 Data:

Maximum output power measured = -0.04 dBm or 0.991 mW

FCC SAR Exemption per KDB 447498

- a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{(GHz)}}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz

Max. PWR (dBm)	Max. PWR (W)	Max. PWR (mW)	Min dist. (mm)	Freq. (GHz)	≤ 3.0 --
-0.04	0.000991	0.990832	5	2.402	0.307126

Notes: The maximum conducted power was taken from Intertek Report # 105634374BOX-008.

The 1-g and 10-g SAR Test Exclusion Thresholds is calculated to be at 0.307 which is less than 3.0, therefore, the EUT meets the SAR Test Exclusion Thresholds.

RSS 102 SAR Exemption

The measured maximum output power of 0.991 mW is less than 2 mW limit specified at 3500 MHz, therefore, the EUT meets the SAR Exemption.

6 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	08/26/2024	105634374BOX-008.MPE	KPS <i>KPS</i>	VFV <i>VFV</i>	Original Issue